



Master of Science in Engineering

SOFTWARE ENGINEERING

The international Master's program in Software Engineering aims at providing students with advanced software engineering and management skills, as well as specialized skills in two major application domains: enterprise systems and embedded real-time systems.

- International team of lecturers
- Guest lecturers from the industry
- 2-3 month professional internship
- Joint degree from two universities
- Scholarships covering full tuition fees and additional stipends
- Opportunity to conduct research within the Estonian Center of Excellence in Computer Science



Excellent international career prospects

The program will provide the specialized knowledge and professional skills needed in a career path leading to high-end technical roles (e.g. software analyst, architect or research engineer) or managerial roles (e.g. project/team leader or technology officer). Graduates from the program will be well equipped to join the highly dynamic software industry in the Baltics, Northern and Eastern Europe.



Why choose Estonia for your Master's

Estonia is well known for its eagerness in embracing technology-driven innovation. It is a pioneer in electronic identity, electronic voting, and vigorous in adopting mobile technology, online banking and electronic government services.

Estonia is also home to internationally successful IT innovations as well as a groundswell of IT ventures. The program will expose students to this exciting environment and provide them with skills in innovative and cutting-edge software technology.

Jointly delivered program:

This Master's program in Software Engineering is jointly delivered by the two largest public universities in Estonia:



Founded in 1632
17,000 students, incl. 600 international
10 faculties, 5 colleges
Multidisciplinary research university
www.ut.ee



Founded in 1918
12,000 students, incl. 200 international
8 faculties, 4 colleges
University specializing in engineering and technology
www.ip.ttu.ee

Admitted students will be registered both at the University of Tartu and Tallinn University of Technology for the duration of the program. Upon successful completion of the program, students will receive a joint degree signed by both universities.



National Quality Award

This Master's program has been selected by the Estonian Ministry of Education and Research as one of the winners of the national competition of attractive international Master's programs in Estonia and received the "National Quality Award".



Vladimir Šor

Software Architect, Webmedia
PhD Student

Institute of Computer Science, University of Tartu

The Master's program at the University of Tartu gave me a head-start in my career as software developer. Well before the end of my studies I had already secured a job that now gives me a lot of professional and personal satisfaction and international experience. My years as a student left such an impression on me that I decided to enroll in PhD program while working.



Eneli Sutt

Master's Student
Institute of Computer Science, University of Tartu

The study environment at the Institute of Computer Science at the University of Tartu is very intense and so is the student life. Lecturers are approachable and supportive, and fellow students are keen to share their learning experiences and are excited about their future. Tartu is definitely a great place for studying!

General admission requirements:

1. Bachelor's degree (or equivalent) in Information Technology, Computer Science, Software Engineering, Computer Engineering, Information Systems or a related field.

Applicants with a Bachelor's degree in Mathematics or Natural Sciences, Technology, Engineering, Business and Economics must have completed at least 24 ECTS in Information Technology, including courses in Programming, Database Technology and Software Engineering.

Professional software analysts and developers with the appropriate education seeking to upgrade their knowledge of the discipline or to specialize in enterprise software or embedded real-time software are also encouraged to apply.

2. Proof of English language proficiency is required from international applicants for whom English is not a native language. One of the following is accepted: TOEFL 550 or higher (computer based - 213, internet based - 79/80); IELTS 6.5; Cambridge Certificate of Proficiency in English - C; Cambridge Certificate in Advanced English - B.

Application process:

The application process will be managed by the University of Tartu, which is the main coordinating institution. To apply:

1. Complete the online application form for Master's studies by the indicated deadline: www.ut.ee/software
2. Print and sign the paper application form, and mail it together with the necessary documents by the indicated deadline to: International Student Service, University of Tartu, Ülikooli 18, Tartu 50090, ESTONIA

Documents to be submitted:

- completed and signed application form;
- completed and signed application form for recognition of prior learning;
- copy of the Bachelor's diploma (or highest study level) and diploma supplement (transcript/mark sheet) in the original language (a copy certified by the educational institution issuing the document or a notarized copy);
- official translation of the diploma and diploma supplement (transcript/mark sheet) into English, translation certified;
- non-EU applicants only: certified copy of the upper secondary school certificate and list with grades;
- non-EU applicants only: official translation of the upper secondary school certificate and list with grades into English, translation certified;
- official test results of English language proficiency;
- copy of an identification document.

Applicants will receive confirmation upon receipt of their application and its status. Completed applications will be considered by the Admission Commission and students accepted into the program will be notified of their admission soon after.

LIST OF COURSES

Curriculum structure:

Core compulsory module	36 ECTS
Specialization module	24 ECTS
Practice module	18 ECTS
Elective courses	12 ECTS
Master's thesis	30 ECTS
TOTAL	120 ECTS

Location:

Depending on the choice of specialization students will be based either in Tartu (specialization: Enterprise Software Engineering) or in Tallinn (specialization: Embedded Real-Time Software Engineering) for most of the program's duration. Elective courses, the Practice module and Master's thesis can be done at both locations. All students, regardless of specialization, will spend some time during the period of their studies at both partner universities. For more information please visit the program website.

Core compulsory module (36 ECTS):

Tartu-based:	Software Process Management Software Economics Systems Modeling
Tallinn-based:	Software Engineering Paradigms Requirements Engineering Software Quality and Standards

Specialization module (24 ECTS):

Tartu-based: Enterprise Software Engineering

Enterprise System Integration
Business Process Management
Data Mining
Seminar on Enterprise Software

Tallinn-based: Embedded Real-Time Software Engineering

Foundations of Embedded Real-Time Systems
Real-time Operating Systems and Systems Programming
Applied Real Time Systems Development with UML/SDL
Formal Methods in Embedded Real-Time Systems Development

Practice module (18 ECTS):

The practice module provides an opportunity for students to apply the knowledge acquired during the program. Students have a choice between:

Option 1: An internship of 2 to 3 months in a software company such as Cybernetica AS, Helmes, Microlink and Webmedia, or in the IT department of a large organization such as Hansapank/Swedbank and EMT, either in Tallinn or in Tartu.

Option 2: A combination of software projects and teaching practice.

Elective courses (12 ECTS):

Tartu-based:	User Interface Design Social Aspects of Information Technology Advanced Algorithms Estonian for International Students
Tallinn-based:	Intelligent Systems Agent-Oriented Modeling Hybrid Systems Estonian for International Students

Application deadline:

EU applicants: June 1
Non-EU applicants: April 15

NB! Applicants with diplomas issued later than the set deadlines (e.g. in July), please send the application form and the most recent Transcript of Records by the required deadline. Indicate to the International Student Service when your diploma will be issued. For further information contact the International Student Service directly.

Language of instruction: English

Program duration:

2 years; possibility of credit transfer is available to graduates with a 4-year Bachelor's degree

Tuition fees and scholarships:

The program fee is € 3300/year and covers tuition, essential study materials, supervision and advice for thesis preparation. A number of tuition-waiver scholarships and stipends of € 2250/year will be granted to top-ranked applicants.

Teaching staff:

The program will be taught by professors with international experience from the Institute of Computer Science at University of Tartu and the Institute of Informatics at Tallinn University of Technology. Several courses will feature guest lecturers from the industry or foreign institutions. The research component of the program will draw upon the infrastructure and competencies of the Estonian Center of Excellence in Computer Science.

Address for inquiries:

**Institute of Computer Science
University of Tartu**

Prof. Marlon Dumas, Program director
University of Tartu
J.Liivi 2, 50409 Tartu
E-mail: marlon.dumas@ut.ee

International Student Service

University of Tartu
Ülikooli 18, 50090 Tartu, Estonia
E-mail: studyinfo@ut.ee
Telephone +372 737 6109
Fax +372 737 5153

Additional information:

University of Tartu	www.ut.ee
Tallinn University of Technology	www.ip.ttu.ee
Tartu	www.visittartu.com
Tallinn	www.tourism.tallinn.ee
Estonia	www.visitestonia.com

Program website

www.ut.ee/software



Tallinn

Capital of Estonia

Population: 400 000

City rights: since 1248

2011 European Capital of Culture

- » Unique Old Town, registered on UNESCO's World Heritage List since 1997
- » Nested on the shores of the Gulf of Finland, 80 km south of Helsinki
- » Nicknamed the "New Prague", with winding cobblestone streets, medieval and baroque architecture
- » Art and culture are highly valued by locals and tourists alike
- » Modern developed infrastructure, affordable prices

Estonia

Population: 1.3 million

Capital: Tallinn

Official language: Estonian

Area: 45 227 km²



- » Member of European Union and NATO
- » Just a short flight from London, Paris, Moscow
- » Country of 1500 islands and 1000 lakes
- » Abundant nature: 50% of Estonia is covered with forests, bogs, wetlands
- » In midsummer the sun rises at 3:40 and sets at 22:57
- » E-stonia: e-government, e-parking, e-elections...
- » Birthplace of Skype
- » Favorite pastimes: skiing, sauna, singing



Tartu

Population: 100 000

City rights: since 1224

Home of the University of Tartu

Estonia's second largest city

- » First mentioned in historic records in 1030
- » Intellectual capital of Estonia
- » Picturesque green city center on the banks of the River Emajõgi
- » Over one fifth of population are students in higher education
- » "Child Friendly City" title awarded by UNICEF in 2004
- » 22 museums, 17 galleries, 10 concert venues
- » English and Russian are spoken widely

